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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,508	11/12/2003	Tzu Chi Cheng	J4P3004-US921015	4862
47111	7590	05/17/2005	EXAMINER	
Tzu Chi Cheng				REHM, ADAM C
235 CHUNG-HO BOX 8-24		ART UNIT		PAPER NUMBER
TAIPEI HSIEN, 235				2875
TAIWAN				

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/705,508	CHENG ET AL.
	Examiner	Art Unit
	Adam C. Rehm	2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-9 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date: ____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: ____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: ____

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 5 is objected to because of the following informalities:
2. Claim 5 includes word "Aluminium" appears to be incorrect with the intended word being "Aluminum."
3. Claim 5 includes reference character "30", which is not enclosed within parentheses. Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims.

See MPEP § 608.01(m).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-5 and 8-9 are rejected under 35 U.S.C. 102(a) as being anticipated by SHIGEKAZU (JP 2003-249693).
5. In regards to Claim 1, SHIGEKAZU provides at least one blue light emitting diode (1) as a blue light source; at least one red light emitting diode (2) as a red light source; and a fluorescent layer (3) formed by mixing fluorescent powders with transparent resin

(Paragraph 14); the fluorescent layer being glued to the blue light emitting diode and the red light emitting diode (Figure 1); the blue light emitting diode and the red light emitting diode emitting blue light and red light, respectively, which are then mixed (Paragraph 16); the fluorescent layer absorbing radiation having a blue light to emit light with wavelengths different from the blue light and red light (Paragraph 16).

6. In regards to Claim 2, SHIGEKAZU provides an LED Lamp wherein the light emitted from the fluorescent layer (3) due to the excitation of the blue and red light is mixed with the red light and the blue light so as to present a white light (Paragraph 16).

7. In regards to Claim 3, SHIGEKAZU provides an LED Lamp wherein the wavelength of the light from the fluorescent layer (3) is between 500 and 585 nm (Paragraph 3 and Drawing 5).

8. In regards to Claim 4, SHIGEKAZU provides an LED Lamp wherein the blue light from the blue light emitting diode (1) has a wavelength between 360 and 480 nm (Paragraph 14) and the red light from the red light emitting diode (2) is between 585 and 780 nm (Paragraph 14).

9. In regards to Claim 5, SHIGEKAZU provides an LED Lamp wherein the fluorescent powders of the fluorescent layer are YAG (Paragraph 14).

10. In regards to Claim 8, SHIGEKAZU provides an LED Lamp wherein material of the fluorescent powders of the fluorescent layer is YAG:Ce (Paragraph 14).

11. In regards to Claim 9, SHIGEKAZU provides at least one blue light emitting diode (1) as a blue light source; at least one red light emitting diode (2) as a red light source; a fluorescent layer (3) formed by mixing fluorescent powders with transparent resin

(Paragraph 14); and the fluorescent layer enclosing the blue light emitting diode (Figure 1); and a transparent resin layer enclosing the fluorescent layer and red light emitting diode (Figure 1); the blue light emitted from the blue light emitting diode stimulating the fluorescent layer to emit light with wavelengths different from the blue light and red light (Paragraph 16); the light emitted from the transparent resin layer so that the light from the fluorescent layer is mixed with blue light and red light to present light of another color (Paragraph 16).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over SHIGEKAZU (JP 2003-249693) in view of KANO ET AL. (US 3,875,456).
13. Regarding Claims 6 and 7, SHIGEKAZU substantially discloses the claimed invention including at least one blue light emitting diode (1) as a blue light source; at least one red light emitting diode (2) as a red light source; and a fluorescent layer (3) formed by mixing fluorescent powders with transparent resin (Paragraph 14); the fluorescent layer being glued to the blue light emitting diode and the red light emitting diode (Figure 1); the blue light emitting diode and the red light emitting diode emitting blue light and red light, respectively, which are then mixed (Paragraph 16); the

fluorescent layer absorbing radiation having a blue light to emit light with wavelengths different from the blue light and red light (Paragraph 16).

14. SHIGEKAZU does not disclose a recess in a reflecting cover (Claim 6) or a groove above a main lead frame (Claim 7) with a fluorescent layer filled into the recess or groove (Claims 6 and 7). However, KANO provides a recess in a reflecting cover (2) or groove (2) above a main lead (4) with a fluorescent layer (Column 3, Lines 46-48) filled into the recess or groove (2).

15. It would be obvious to one having ordinary skill in the art at the time the invention was made to modify the SHIGEKAZU device to include the type of reflective recess or groove as taught by KANO to facilitate infrared to visual conversions (Column 3, Lines 46-48).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

16. BUTTERWORTH ET AL. (US 5,847,507) provides a fluorescent lens for an LED consisting of Yttrium Aluminum Garnet and Cerium in order to produce white light.

17. VRIENS ET AL. (US 5,813,753) provides an LED surrounded by a phosphor layer and situated in a depression having reflective sidewalls.

18. LOWERY (US 5,959,316) provides a blue LED used in combination with a fluorescent material to produce white light.

19. MUELLER-MACH ET AL. (US 6,501,102) provides an LED device that produces white light by performing phosphor conversion utilizing Europium ( $\text{Eu}^{2+}$ ).

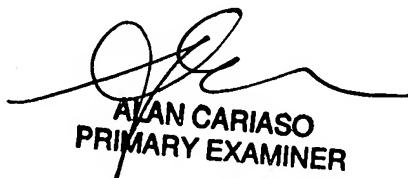
20. REEH ET AL. (US 6,576,930) provides a light radiating semiconductor component with a luminescence conversion element, said element preferably being YAG:Ce.

21. KAWAE ET AL. (US 2002/0080501) provides an LED and associated cover utilizing Terbium (Tb) for altering the wavelength of said LED.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam C. Rehm whose telephone number is 571.272.8589. The examiner can normally be reached on M-F 9-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571.272.2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ALAN CARIASO  
PRIMARY EXAMINER

ACR  
May 12, 2005